

Using Computers in the Interrelated Resource Room

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After a long, tiring day, Judy wearily rolled her classroom computer next door to Sally's room. She was frustrated with how the computer seemed to be the source of so much disruption in the classroom, both for herself and her students. "Sally is a computer whiz," she thought, "I know she can put this thing to good use!"

When Judy came in, Sally was just finishing up with her last class, who was reluctant to leave to get ready to go home. A group was gathered around one computer, one child at the keyboard, one at the mouse, and several standing behind them. "Cool!" one of them said, "get that down! That snake ate an egg the size of a softball!" One child wrote on a worksheet. "Make sure you put his jaws came apart!" said another. Sally sat with one child, taking a running record as he read from a primary level book on reptiles. Two girls sat in the reading center, partner reading a book which looked like someone had written on the computer. At another computer, a child practiced phonogram combinations in what looked like a space setting. Sally looked up, and told the student to wait a minute. "Yes?" she asked. Judy looked around the room. "Uh, I was wondering...if you would come by after bus duty and talk with me about how you manage your computers!"

Sally smiled. "Sure!" she said. "I couldn't teach without them. How about right after the last bus is called?"

Judy looked relieved. "You know where I'll be!" she said, rolling the computer back out the door.

Computers in the resource room

This article offers suggestions for making best use of a computer in the resource room. Many factors make the use of a computer in a resource setting difficult: Management, software selection, and curriculum issues must all be considered. Resource teachers should also be aware of potentially negative computer practices. We will follow the conversation between the two resource teachers as Judy asks common questions teachers have about using computers in the classroom, while Sally provides answers that have taken into account the nature of the resource room.

Judy walked slowly from her duty station into her classroom and began to straighten up from the day's activities. A few minutes later, Sally came in. "What's up?" she said energetically. "Rough day?"

"I don't know," sighed Judy. "I just can't figure out this computer thing. Maybe you can help me with some questions that I have."

"Well," laughed Sally, "I'm no expert. But I'll answer what I can. Fire away!"

How can I get the most out of the students' excitement?

Management problems may actually increase as students become excited about using the computer, an attitude that teachers would like to capitalize on. A computer schedule, coupled with consistent expectations and boundaries guiding computer use, can help teachers channel students' excitement into opportunities for learning versus opportunities for disruption.

Computer schedules go a long way toward reducing students' anxiety over "When will I get to get on the computer?" Scheduling computer time in the resource room,

however, is not an easy feat. Some students are served once a week, while others stay three hours a day. Groupings change as students move in and out of the classroom at different times. Management problems can be reduced somewhat if the resource room contains two computers - one computer can serve solely as the "scheduled" computer, with a poster nearby outlining who is to be on, for how long, and with what program. The second computer can then be kept open for teacher demonstrations, group work, and spontaneous needs that occur during the day. A resource teacher who has only one computer in the classroom, or shares a computer with a group of teachers, may have to make choices as to how he or she wishes to integrate the computer into the classroom.

How can I integrate the computer into the curriculum?

There are two ways the computer is commonly used in the classroom: As an individual learning center for students working independently, or as a "tool kit" for students working in pairs or small groups. Regardless of how many computers a teacher has access to (with perhaps the rare exception that there is a computer for every student!), these two ways of using the computer are relevant to all teachers as they negotiate how computers will be used and for what purposes.

The computer as individual learning station is a common application of technology in the resource room. This arrangement fits neatly into models of special education that focus on individualized curricula, goals and objectives, and the completion of individualized units. Many software packages are marketed for both regular and special education that clearly state the learning goals and objectives to be mastered by students using the software. These goals and objectives can be easily matched to those found on a student's IEP, and provide continuity with the rest of his or her educational

program. Many programs provide students with opportunities for practice that are more motivating than traditional paper and pencil exercises.

While hundreds of programs exist that target reading and writing skills, some are better than others. This can present more problems for the busy resource teacher with a small budget for instructional materials. Although there are many programs available, students usually use a program more thoroughly if titles are added to the computer center one at a time. The program can then become a class favorite, much like a favorite book or group activity. As students begin to get tired of the program or “top out” what they can learn from it, the teacher can bring in another title. This also helps teachers’ budgets if they purchase software from their own funds or more funding becomes available throughout the year.

Almost every teacher uses the computer as individual learning station model at some time, but the model of computer as a “tool kit” can bring new life to the resource classroom. Tool kits contain cognitive tools, which are technologies used to enhance the cognitive powers of human beings during learning, thinking, and problem solving (Jonassen and Reeves, 1996). Many teachers have grown frustrated with prescriptive curricula and students working in isolation as the teacher runs from one student to another to provide assistance. While students learn *from* the computer when they work with drill and practice or tutorial software, they learn *with* the computer when it is set up as a tool kit.

Tool kit applications differ from those used in a computer learning station. An example of a program that might be found in a tool kit is a word processor. When a child opens up a word processing document, nothing is there until he or she enters information.

While some tool kit programs provide more “bells and whistles” than others, all of their features are there to support the ideas the child has, rather than show the child the ideas the programmer or designer might have had.

While drill and practice software is often used by one or two children at a time, tool kit programs work best with groups of children. The name tool “kit” implies that more than one of these programs is needed. When purchasing a tool kit, teachers often work around a thematic unit of study, such as “animals” or “US History.” For an animals unit, a teacher might use the word processor and spreadsheet that came with the computer, a multimedia encyclopedia, and a multimedia construction kit. These resources, along with print materials, could be set up around the computer in the classroom library and used by students to gather information about animals to write reports, make multimedia presentations, or create displays. Often students who resist reading and writing during traditional activities enjoy doing so while completing projects.

Using a computer tool kit with groups of students can be difficult. Once again, a schedule helps things run smoothly. Teachers working with groups of students can use computer scheduling as a rationale for planning their projects. If groups are given a calendar (easily made with most word processing programs), the teacher can assign each group a different week to use the computer. While one group is on the computer, other groups can read books, complete activities, go to the library, organize their information, and conference with the teacher. If all groups are working on related projects (such as “animals”), the teacher can facilitate data collection with read alouds, computer presentations/demonstrations to the whole group, and by collecting relevant print materials for the students to use in the classroom library.

What software is available and how do I chose the right kind?

While teachers may be relieved to purchase only one or two pieces of software at a time, they still may be confused at which programs to buy. Word of mouth from other teachers and students, on-line resources, and print magazine reviews provide teachers with software descriptions, ratings, and reviews. Some companies offer trial periods to see if the software is appropriate, after which the program can be returned.

Tool kit programs that work especially well with struggling readers and writers include talking word processors and text readers. Talking word processors not only read aloud what the student has written, but also have talking spell checkers. For those students who cannot read the different choices provided by typical spell checkers, this feature is especially helpful. Text readers allow teachers and students to take any digitized text and have it read aloud by the computer. The most sophisticated text readers allow the reader to choose reading rate, highlighting of words, sentences, or paragraphs, voice, and color of text. Newer text readers also read documents directly on the World Wide Web. See Figure 1 for specific examples of appropriate software, and Figure 3 for sources of software descriptions, ratings, and reviews.

How can I encourage appropriate behavior when students use the computer?

Although the computer can be very exciting, it also presents unique management problems, especially in classrooms with only one computer. Planning will take care many problems, but students may still demonstrate inappropriate behaviors while using the computer. Every student should have an opportunity to use the computer, but no student has the right to misuse it - children who are discovered destroying the hardware or others' work should be promptly removed and given another chance each time they are

scheduled to be on the computer. Students who resist moving away from the computer can be allowed to remain while the teacher removes the power cord. This strategy has proven effective with students who become oppositional about moving away from the computer. After this occurs once, students will often save what they are working on and move voluntarily rather than lose their typed material or the “highest board” of their game! Groups who are especially hard to manage may need the structure of “checking out” the power cord from the teacher when it is their time to use the computer. Care might also need to be used in what times of day specific children are scheduled or what order they are scheduled in; if a child has difficulty maintaining control during a particular time of the day or activity, this could become her regularly scheduled computer time. When following a posted schedule, the child who is next in line usually approaches the child who is seated at the computer. If these two children do not get along, disagreements can occur over whose turn it is or how much time the user has left. Less direct management of the computer is required by the teacher if children who typically get along are scheduled after one another. Modeling of how to approach the computer user and how to leave the computer station may be necessary in some situations.

Is there anything I shouldn't do?

Teachers should be cautioned about using the computer as a “reward.” Although it is tempting to use the computer as a reward for good behavior or for students to use after work has been completed, this tends to exempt students who could perhaps benefit most from computer use. With a computer schedule, each child has the opportunity to use the computer in the way the teacher has determined most beneficial for him or her. While each child should have the right to use the computer regularly, it should be noted that

Computer “rewards” might be provided by allowing students to work with those whose time is scheduled with that child’s permission, or by scheduling computer reward time during homeroom, lunch time, the resource teacher’s planning period, or while busses are being called. These are times that the computer is not typically used in the resource room. Children usually find the academic games entertaining and rewarding, as well as using tool kit applications for their own purposes, such as making cards and banners.

Getting ready for tomorrow

“Whew!” said Judy, “that’s a lot to think about. How did you ever get to where you are now?”

Sally smiled. “By doing a little at a time. Pick one small thing to do first, and see how that works for you. If you’re not comfortable with the program or how you’ve scheduled the times on the computer, you won’t stick with it. As you get comfortable with one thing, add another. Before long, the computer will be an integral part of your program!”

As the teachers walked out of the classroom together, Judy said, “I’m going to stop at the store on the way home and look for one of those programs where you can create calendars, banners, and cards. We’ve been working on writing friendly letters, and I bet the kids would love to publish their work using some of that clip art...”

Sally laughed. “Looks like I’ve created a monster!” she said, laughing as they walked out of the back door of the school. “I can’t wait to come see you tomorrow.”

Reference

Jonassen, D. H., & Reeves, T. C. (1996). Learning with technology: Using computers as mindtools. In D. H. Jonassen (Ed.), Handbook of research on educational communications and technology. Englewood Cliffs, NJ: Educational Technology.

Figure 1. Examples of Software

Software for individual learning stations

Reading

Bailey's Book House (Edmark)

Kid Phonics (Davidson)

Kid Phonics 2 (Davidson)

Let's Go Read (Edmark)

Living Books series (Broderbund)

Wiggle Works (Scholastic)

WordMaker (Don Johnston)

Simon S.I.O. (Don Johnston)

Start-to-Finish Books (Don Johnston)

Writing

Stanley's Sticker Stories (Edmark)

Imagination Express series (Edmark)

Math

Millie's Math House (Edmark)

Math Blaster (Davidson)

Mighty Math Number Heroes (Edmark)

Zoo Zillions (Edmark)

Science

Sammy's Science House (Edmark)

Gizmos and Gadgets (The Learning Company)

Magic Schoolbus series (Scholastic)

Software for Computer Tool Kits

Graphic Organizer/Organization Tools

Inspiration (Inspiration Software)

Kidspiration (Inspiration Software)

OmniGraffle (Omni Group)

Word Processor/Spreadsheet/Database Applications

Write:Out Loud (Don Johnston)

Co:Writer (Don Johnston)

Draft:Builder (Doh Johnston)

Intellitools

KidWorks Deluxe (Davidson)

Text Readers

Read:OutLoud (DonJohnston)

Kurweil Reader

Ultimate KidBooks (Universal Learning Technologies)

Multimedia Construction

HyperStudio (Roger Wagner Publishing)

Hyper Card (Apple)

iLife Suite (Apple)

Kid Pix Studio Deluxe (Broderbund)

PowerPoint (Microsoft)

Electronic/Multimedia References

BrainPop (www.brainpop.com)

United Streaming (discoveryeducation.com)

Eyewitness Encyclopedia series (Dorling Kindersley)

Grolier's Multimedia Encyclopedia (Grolier)

Encarta (Microsoft)

American Heritage Children's Dictionary (Houghton Mifflin)

My First Incredible Amazing Dictionary (Dorling Kindersley)

3D Atlas (Electronic Arts)

Figure 2. Students' and Teachers' views of using technology

"The little spell checker help us spell words, and if we got it wrong, it will help us sound the words out and stuff." - student response to electronic spellchecking

"I used to write...I used to get angry and don't write that much. Now, I write full pages!" - student's response to using the writing process with the computer

"They're not puttin pressure on you, like them other teachers do, like, "You better do this problem, if you skip it you gonna get in trouble." It ain't like that, it's um, do what you can do, and if you can't do it, it helps you better, if you can try it, to do it. But if you can't, then, let it go, and go to another, the next one." - student comment on computerized feedback

"Some kids can have fun, and not go to - see, when they play a computer, they won't fall asleep. But when's peop-when teachers are talkin, they'll just doze right off." - student reflection on motivation

"He wasn't scared of it on paper, because he'd been doing it on the computer." - teacher comment on student learning fractions

"A teacher would probably get exasperated and say, "You're just not...", or maybe, relay it to them through just bodily gestures that, "Gosh, you just can't get this," and then give'm something easier to do. The computer is good because it's programmed to keep pushing them, and giving them ways of answering the problems correctly, so I think it really helps their self-esteem." - teacher comment on computerized feedback

Figure 3. On-line References to Software Companies, Descriptions, and Reviews

Software Companies

Broderbund <http://www.broderbund.com>

Claris <http://www.claris.com>

Davidson & Associates <http://www.education.com>

Don Johnston <http://www.donjohnston.com>

Dorling Kindersley <http://www.dkonline.com/dkcom/>

Edmark <http://www.edmark.com>

Electronic Arts http://www.ea.com/index_usa.html

Grolier <http://gi.grolier.com/>

Houghton Mifflin <http://www.hminet.com>

Macmillan/McGraw-Hill <http://www.mmhschool.com>

Microsoft <http://www.microsoft.com>

Roger Wagner Publications <http://www.hyperstudio.com/>

Scholastic <http://www.scholastic.com>

Tom Snyder (www.tomsnyder.com)

Universal Learning Technologies <http://www.universalearn.com>

Software Descriptions and Reviews

<http://www2.childrenssoftware.com/childrenssoftware>

<http://www.kidsdomain.com>

<http://www.educational-software-directory.net/special-needs/special-education>

Figure 4. Sample Computer Schedule

Monday	Computer: Darryl and Stephen Headphones: Patrick and Corey Library: Tanquir, Juwan
Tuesday	Language Experience
Wednesday	Computer: Patrick and Corey Headphones: Tanquir and Juwan Library: Darryl and Stephen
Thursday	Language Experience
Friday	Computer: Tanquir and Juwan Headphones: Darryl and Stephen Library: Patrick, Corey, and James

**Reading I
Computer/Language
Experience Schedule**